REMARKS

In response to the non-final Office Action of May 14, 2008, applicant asks that all claims be allowed in view of the following remarks. Claims 1, 7, 18, 20, 21, 28, 59, 60, 63-66, and 71-87 are pending, of which claims 1, 18, 20, 76, and 82 are independent. Claims 2-6, 8-17, 19, 22-27, 29-58, 61-62, 67-70 have been cancelled.

Initially, applicant thanks Examiner Pervan for the courtesies extended to the undersigned during the telephone interview of August 6, 2008. During the interview, Examiner Pervan confirmed that the Action of May 14, 2008 is a non-final Office Action despite the statement "this action is made final" on page 9 of the Action of May 14, 2008. Examiner Pervan indicated that "this action is made final" was included on page 9 as a result of an administrative oversight, and Examiner Pervan agreed to issue an Interview Summary noting that the Action of May 14, 2008 is a non-final Office Action.

Claim Rejections—35 U.S.C. § 103

Claims 1, 7, 18, 20, 21, 28, 59, 60, 63-66, and 71-87 have been rejected as being unpatentable over U.S. Patent No. 6,373,454 (Knapp) in view of U.S. Patent No. 6,369,786 (Suzuki) and U.S. Patent Publication No. 2003/0231152 (Shin). Applicant requests withdrawal of this rejection for the reasons discussed below.

Claims 1, 7, 64, 71- 73, 76-81

Among other features, claims 1 and 76 recite a driven circuit including a first transistor, a signal line electrically connected to the first transistor through a node, and a first precharge circuit electrically connected to the signal line and including a second transistor. A gate width of the second transistor is larger than a gate width of the first transistor.

Applicant requests reconsideration and withdrawal of this rejection because it would not have been obvious to modify Knapp and Suzuki with Shin to include a second transistor having a gate width larger than the gate width of the first transistor.

In Knapp, display elements 20 are located at intersections between row and column address conductors 12 and 14, and each display element 20 has an associated switch that is connected to the row and column conductors 12 and 14. See Knapp at col. 5, lines 24-30 and 42-46; col. 6, lines 6-8. The switch includes a transistor 30 with a drain terminal connected through a switch 33 to the cathode of the display element 20. See Knapp at col. 6, lines 21-26. An input line 35 connects a switch 37 to a node 36 (see Knapp at col. 6, lines 39-43), and an input signal I_{in} corresponding to the current required for the display element 20 is driven through the transistor 30 via the input line 35 (see Knapp at col. 6, lines 63-75 and FIG. 2).

The Office Action equates the transistor 30 with the recited first transistor. See Office Action at page 2, line 19. The Office Action also acknowledges at page 2 that Knapp does not disclose a pre-charge circuit including a second transistor or that a gate width of the second transistor is larger than a gate width of the first transistor. For these features, the Office Action respectively relies on Suzuki and Shin. In particular, the Office Action asserts that "it would have been obvious ... to modify Knapp with the teachings of Suzuki, precharge voltage being supplied to a node prior to supplying a signal current" and that "it would have been obvious to modify Knapp and Suzuki with the teachings of Shin, gate width of the second transistor being larger than the gate width of the second transistor, because it allows for greater current to flow from the precharge circuit, which allows for a faster precharge." Applicant disagrees.

Suzuki relates to matrix driving techniques for current-driven display elements. See Suzuki at col. 1, lines 8-9. A matrix driving apparatus (or matrix drive) includes scanning electrodes and signal electrodes, current-driven display elements located at the intersection of the scanning and signal electrodes, and a precharge circuit connected to the signal electrodes. See Suzuki at col. 3, lines 52-64. Current sources CS_1 to CS_x provide current to each display element. See Suzuki at col. 4, lines 18-22 and FIG. 7. In one aspect of Suzuki, a precharge circuit 3A includes diodes D_1 to D_x, which are respectively connected to signal electrodes SiE_1 to SiE_x. See Suzuki at col. 5, lines 50-52 and FIG. 7.

Shin relates to an image display having pixels, with the brightness of each pixel being controlled by controlling an amount of current supplied to the pixel. See Shin at ¶ 0003. The

pixels include a light-emitting element and two transistors, M1 and M2. See Shin at ¶ 0014. The channel width of the transistor M2, which forms a current mirror, is greater than that of the transistor M1, which drives the light-emitting element. See Shin at ¶ 0016.

It would not have been obvious to modify Knapp and Suzuki with the teachings of Shin. As discussed above, in Knapp, an input line 35 connects to a node 36 through a switch 37 that controls an application of an input signal, I_{in}, to the node 36. See Knapp at col. 6, lines 39-43. The input signal, I_{in}, which corresponds to the current required to drive the display element 20, is driven through the transistor 30 via the input line 35. See Knapp at col. 6, lines 63-75 and FIG. 2. In Suzuki, the current source CS_x provides the current to drive the display elements. Thus, assuming Suzuki's precharge circuit 3A could be combined with Knapp, the current source CS_x and the output of Suzuki's precharge circuit 3A, which includes the diodes D_1 to D_x would be connected to Knapp's node 36 through the input line 35. Accordingly, the transistor 30 in Knapp would be connected to one of the diodes D_1 to D_x and to one of the current sources CS_x of Suzuki, and the amount of current that would flow into the transistor 30 from the node 36 would be the same as an amount of current that flows to one of the diodes D_1 to D_x regardless of whether a gate width of the transistor 30 and a gate width of one of the diodes D_1 to D_x were changed. Accordingly, it would not have been obvious to modify Knapp and Suzuki with Shin to allow for greater current to flow from the precharge circuit as suggested by the Office Action.

For at least this reason, applicant requests reconsideration and withdrawal of the rejection of independent claims 1 and 76, and their dependent claims 7, 64, 71- 73 and 76-81.

Claims 18, 28, 59, 66, 74, and 82-87

Among other features, independent claims 18 and 82 recite a driven circuit including a first transistor, a precharge circuit including a second transistor, and a first switch for controlling an electrical connection between the driven circuit and the precharge circuit, where a gate width of the second transistor is larger than a gate width of the first transistor, as recited in amended claim 18.

In Knapp, a drive transistor 30 (which the Office Action equates with the recited driven circuit) is connected to a display element 20 through a switch 33 (which is equated with the recited first switch). See Knapp at col. 6, lines 21-26 and FIG. 2. The Office Action acknowledges that Knapp "does not disclose a precharge circuit" and relies on Suzuki's precharge circuit 3A for this feature. However, as shown in Figure 2 of Knapp, the switch 33 is between the display element 20 and a transistor 30. As discussed above with respect to the rejection of claim 1, combining Suzuki's precharge circuit 3A with Knapp would result in the precharge circuit 3A being connected to the node 36 via the input line 35. Thus, even if Knapp could be modified with Suzuki's precharge circuit 3A, Knapp's switch 33 would control an electrical connection between the display element 20 and the transistor 30 (which is equated with the driven circuit) instead of an electrical connection between the driven circuit and the precharge circuit.

Accordingly, no proper combination of Knapp and Suzuki describes or suggests a driven circuit including a first transistor, a precharge circuit including a second transistor, and a first switch for controlling an electrical connection between the driven circuit and the precharge circuit.

Shin, which is cited as showing a gate width of a second transistor is larger than a gate width of a first transistor, does not remedy the failure of the combination of Knapp and Suzuki to describe or suggest the noted feature of independent claims 18 and 82.

For at least this reason, applicant requests reconsideration and withdrawal of the rejection of independent claims 18 and 82, and their dependent claims 28, 59, 66, 74, and 83-87.

Claims 20, 21, 60, 63, 65, and 75

Among other features, independent claim 20 recites a second switch for controlling an electrical connection between the driven circuit and multiple current source circuits. No proper combination of Knapp, Suzuki and Shin describes or suggests this feature.

In Knapp, an input switch 37 controls the application of the input signal, I_{in}, to the node 36. The Office Action equates Knapp's switch 37 with the recited second switch. However,

even if the switch 37 could be equated with the recited second switch, the combination of Knapp and Suzuki still would not describe or suggest the noted feature of claim 20. As discussed above, if Suzuki could be combined with Knapp in the manner suggested by the Office Action to include Suzuki's precharge circuit 3A, the transistor 30 (which is equated with the driven circuit) would be connected to one of Suzuki's current sources CX_s and to one of the diodes D_1 to D_x through the node 36. Thus, Knapp's switch 37 would control an electrical connection between a driven circuit (transistor 30) and a single current source rather than between a driven circuit and multiple current source circuits.

Accordingly, for at least the reason that no proper combination of Knapp and Suzuki describe or suggest a second switch for controlling an electrical connection between the driven circuit and plural current source circuits, and because Shin does not remedy this failure of Knapp and Suzuki, applicant requests reconsideration and withdrawal of the rejection of claim 20 and its dependent claims 21, 60, 63, 65, and 75.

Conclusion

Applicant submits that all claims are in condition for allowance.

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this reply should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this reply, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

No fees are believed due at this time. Nonetheless, please apply any other charges or credits to Deposit Account 06-1050.

Respectfully submitted,

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